U.S. FISH AND WILDLIFE SERVICE

SPOTLIGHT SPECIES ACTION PLAN

Common Name: **Coral Pink Sand Dunes Tiger Beetle**

Scientific Name: ***Cicindela albissima***

Lead Region: Region 6

Lead Field Office: Utah Ecological Services

2369 West Orton Circle Suite # 50

West Valley City, UT 84119

Species Information:

Status: Candidate

Listing Priority Number: 2

Candidate Assessment Form: 50 CFR Part 17 Vol. 73, No. 238, pg. 75182

Other: Conservation Agreement and Strategy for the Coral Pink Sand Dunes (CPSD) Tiger Beetle, 2009

Threats: The distribution and abundance of the CPSD tiger beetle is very restricted. The occupied habitat is approximately 1,800 by 400 meters (5,900 by 1,000 feet), in a patchy distribution through out the dune field. Drought conditions since 2001 resulted in reduced habitat availability and very low recruitment to the population. Soil moisture seems to have the greatest effect on oviposition and larval survival (Knisley and Gowan 2008, p. 10). A wet year in 2005 produced a slight population increase two years later. Several wet years in a row may be necessary to significantly increase the tiger beetle population (Knisley and Gowan 2009, pp. 5-6). In times of drought, the overall habitat availability on the dunes is much reduced. Rainfall is the primary factor controlling population size and the changing dynamics of this species (Knisley and Gowan 2009, p. 8); therefore, drought is the most severe threat this species faces.

Off-road vehicle (ORV) activity has somewhat degraded the beetle's habitat, especially the inter-dunal swales used by the larval population (Knisley and Hill 2001, p. 392-393). The inter-dunal swales are the most biologically productive areas in this ecosystem and have the greatest abundance of suitable prey species. Adult beetles can be killed by ORVs, but more importantly, ORVs can damage vegetation, reduce arthropod prey abundance, and reduce available larval microhabitat (Knisley and Gowan 2006, pp. 20-21).

The BLM and State Parks have monitored ORV impacts to the majority of the species' habitat since 1998, and designated and monitored Conservation Areas to protect beetle habitat by excluding ORV use (Knisley and Hill 1997, pp. 6-7; 2001, p. 10; Knisley 2000, p. 10; 2002, p. 12). The designated Conservation Areas comprise approximately 80% of the beetle's known suitable habitat. Despite these efforts, populations within the conservation areas have not

increased, likely due to the aforementioned drought conditions (Knisley and Gowan 2009, p. 11). ORV use may also be depressing populations outside of the conservation areas.

Target: Species status maintained or improved. Because drought is the most severe threat this species faces, there are limited available conservation options. Improvement of species status will be dependent in large part on spring rainfall amounts. However, the continued monitoring and management of Conservation Areas are important. If the actions outlined in this plan reveal effective conservation options, species status may be improved.

Measure: Maintain population numbers and increase survival and recruitment rate.

Actions: Yearly population and ORV use monitoring in the area are already being carried out on a continuous basis – see "Role of other agencies". Actions presented here are those requiring additional funding above and beyond the established yearly minimum.

Investigate feasibility and effectiveness of habitat manipulation techniques. These include supplemental watering and vegetation thinning. Supplemental watering, if successful, could help maintain adult numbers during drought conditions. Tiger beetles prefer to oviposit in a transition zone between no vegetation and thickly vegetated areas. Manipulating vegetation density could improve the suitability of habitat and result in more recruitment.

Responsible parties: Research will be performed by Dr. C.B. Knisley and associates, tiger beetle specialist with Randolph-Macon University, VA.

Estimated costs of the actions: $15,000 – $25,000 per year for 3 to 5 years

Develop protocol for successful translocation and captive rearing. Captive rearing and successful translocation could be critical toward improving population numbers if further depressed by drought.

Responsible parties: Research will be performed by Dr. C.B. Knisley and associates

Estimated costs of the actions: $5,000

Role of other agencies: Cooperation with the CPSD State Park and BLM Kanab Field Office are essential because the species occurs only on these properties. These entities are responsible for maintaining and patrolling conservation areas, monitoring ORV use, and providing on site education. The BLM also generally provides a yearly stipend for baseline population status surveys performed by Dr. C.B. Knisley. These activities are all these parties are currently available to fund. As members of the conservation team for this species, these parties have agreed on which actions to include in this action plan.

Role of other ESA programs: A Candidate Conservation Agreement is currently being renewed. The actions included here are inline with the new version of that conservation agreement.

Role of other FWS programs: Ecological Services, Endangered Species is currently the only program involved with this species. Continued FWS involvement is required to facilitate actions of the conservation team.

Additional funding analysis: Due to the narrow range and limited ecological management options in the sand dune environment, no additional actions are planned at this time. Future actions will depend on the effectiveness of vegetative manipulation and supplemental watering

studies and could include applying these treatments to greater areas of the sand dunes. Costs of such an action will depend on 1) acreage treated and 2) frequency of treatments. Analysis of this research will be important in determining the costs associated with such actions.

Literature Cited

Knisley, C.B. 2000. Biology and Conservation of the Coral Pink Sand Dunes Tiger Beetle, *Cicindela limbata albissima,* 1999. Report to the U.S. Fish and Wildlife Service.

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Knisley, C.B., and J. M. Hill. 1997. Studies of the Biology and Conservation of the Coral Pink Sand Dunes Tiger Beetle. Report to Bureau of Land Management.

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Project Leader

9/14/09

Date